ASD Weekly Report for the Week Ending December 16, 2005

Operations: Dodson:

- Operation
  Continued beam operation for tune-up and the LDRD experiment
- ARR
  Action Item List-
    - Pre-Start Action Items Submitted to the Project Office
    - Notifications were sent out on "Hidden Action Items", e.g. Shielding Drawings
- Staffing
  3 offers out, 2 Chief Operators and 1 Operator
- Work Planning
  Ongoing, report to Thom Mason due in early January
- Maintenance Management
    - LINAC Power Supplies, RF under Configuration Control
    - LINAC Water Systems are next
    - Critical Maintenance Items
        - CHL- PM schedule in place in Datastream

Accelerator Physics: Henderson

- Beam physics tuneup of the linac was carried out this week. An energy of 924 MeV was reached with 76 SC cavities in operation. Beam pulses up to 50 mA in length and 20 mA in peak current have been transported to the linac beam dump.

- The LDRD-funded laser-stripping experiment has begun. The beamline insertion consisting of two 2T magnets and a laser beam port were installed in the last 2 months, between the last two quadrupoles in the linac dump line. The beam has been transported through the new insertion without difficulty. The 355 nm laser beam is being prepared for the experiment.

Controls: Gurd, DeVan

- The rush to complete Ring, HEBT and RTBT systems occupied most of the week. The team participated in a review of the RID flooding event, and is now contributing to developing and implementing defenses against a similar event in the future.

- As magnet mapping data is received from BNL it is loaded into the database. The data for five 27CD39 horizontal correctors were loaded this week.

- Ring injection dump vacuum system check out is complete. When the fast valve sensor is terminated that section will be vented to complete the test of the sensor and its controller.

- Checkout of the Target PPS continued, along with design of the Instrument PPS for BL4.

- Operational support required a number of call responses. In some cases root causes were found and fixed; in others short term solutions were applied.

- SCL LLRF IOCs 21b, 22b and three LLRF IOCs all in the same rack exhibited a very strange slow-down over the weekend. The other symptom was a lack of access via the serial line. Reboot of the 'digi' solved the problem.

- An error was fixed in the Ether IP driver that may have been the cause of reconnect problems after PLC reprogramming. Time will tell.

Diagnostics: Assadi

- LINAC Operation:
  - SCL BPM 22 needs repair.
  - Faraday Cup [DTL-160] signal cable is shorted inside the vacuum feed-through. Per AP's recommendation, we will wait for an opportune time to repair it.
  - BSM NADS only needed rebooting to bring them online.
  - New SCL laser is installed and is being calibrated for the LDRD experiment.

- Ring-RTBT Installation:
  - All BPMs are online and awaiting final calibration.
  - 85% of BLMs are online and ready. Injection BLMs and collimator straight BLMs will be ready in two weeks. To final BLM software is installed in all IOCs.
  - Ring BCM filters, amplifiers and software are ready and final calibration was performed on Ring BCM. We need to connect the injection BCM and bar code all beam-position toroids.
  - Injection Video system is ready for final alignment and installation of scale-cross.
  - Four ORNL designed wire-scanners are assembled. We hope to install six wire scanners [3 in HEBT, 1 in injection dump and two in RTBT] by Dec-21st.
  - RTBT HARP installation schedule is tight. We successfully tested the modified bellow guides with the pneumatic motion controller.

FE, DTL and CCL: Aleksandrov

SCL and Cryomodules: Campisi, Stout

Cryogenic Systems: Casagrande

HEBT-RING-RTBT: Plum, Hechler

Ring Installation

- The HEBT Charge Exchange Scraper vacuum preparation continued.
- · The HEBT Momentum Scraper drive accuracy was examined.
- · The Ring Primary Scraper blades' position calibration was started.
- · The Ring Primary Collimator outer shielding was received.
- · The Ring Collimator #3 Top Shielding installation was completed and painted.
- · The Ring Collimator straight section QMM/Tune/Damper diagnostic assembly was replaced with a dummy beam pipe.
- · The Ring Extraction doublet magnet assembly between the Kickers was removed.
- · The Ring Extraction Kickers' vacuum seals repair was initiated.
- · The Ring RF straight section IPM and QMM/Tune diagnostic assemblies were replaced with dummy beam pipes.
- · The Ring duct bank conduits filling with poly beads was started.
- · The RTBT EDUMP flight tube pump down port was modified and pumped down
- · The RTBT EDUMP spool pipe was installed and the EDUMP beamline placed under vacuum.
- · The RTBT EDUMP window shielding installation was started.
- · The RTBT Collimator #2 Shielding installation was completed and painted.

Water Installation:

- · The HEBT Collimator closed loop cooling system was checked-out and released for operation.
- · The RID Window and Dump cooling system test and check-out continued.
- · The Ring magnets' cooling lines were modified to resolve earlier flow issues.
- · The Ring Collimator Scraper double-wall piping installation continued.
- · The RTBT Target quads' buss cooling line installation was completed.
- · The RTBT Collimator closed loop cooling system installation continued.
- · The RING & RTBT pneumatic control lines' installation continued.

Survey & Alignment: Error

Ion Source: Stockli

- A second cesiation restored the ion source production on the Frontend to 26 mA peak and 21.5 mA average. Since we are unsure how long this current can be sustained, we have requested time to replace the source at the next earliest convenience.

Mechanical Systems: Murdoch, Hechler

Magnet Measurements: Hunter

Vacuum: Ladd

RF Systems: Champion, McCarthy

- Replaced klystron in station 19c of the superconducting linac. Outgassing during RF operation was causing frequent vacuum power supply faults (ion pump overcurrent).
- Removed E2V 402.5 MHz klystron from test stand in RFTF and replaced it with Thales 402.5 MHz klystron in preparation for testing next week with Thales engineer in attendance.
- Supported Linac operations; operated Ring RF systems when possible (water & vacuum systems limited available time).

- HPRF personnel have moved out of the RFTF into the blue six-plex. LLRF personnel will be moving to the CLO LLRF laboratory next week.
- Implemented software for gathering statistics on cavity tuner operation in the superconducting linac.
- Updated linac LLRF control software on Dec. 07
- Provided remote support for FNAL use of SNS 1.3 GHz LLRF control system.

Ring RF: Hardek

- All four stations are now operational complete with EPICS controls.
- Low Level RF is operational and undergoing testing.
- We have been looking at interference with the Beam Diagnostics systems. We see some interference and are working at cleaning up this interference.

Electrical Systems: Cutler

HVCM: Anderson

- Repaired CCL-Mod4 from severe arcing caused from primary feed plates expanding, likely due to thermal effects.
- Investigated voltage drift problems in SCL-Mod15 and –Mod18, but never really found a smoking gun.
- Adjusted PLC analog readback module filters to eliminate transients induced from pulsing which caused the trips, and installed this upgrade in all modulators.
  LEBT chopper pulser B failed, likely from an electrode arc. It was repaired.
- Wrote specification for LEBT chopper pulser control PCB which is out for review.

PUP: Mann